# AIR FORCE QUALIFICATION TRAINING PACKAGE (AFQTP)



FOR
ENVIRONMENTAL CONTROLS
(3E4X3)

MODULE 12
AFS SPECIFIC HEALTH AND SAFETY

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Career Field Education and Training Plan (CFETP) references from 1 April 02 version.

OPR: HQ AFCESA/CEOF (SMSgt James B. Lucas) Supersedes AFQTP 3E0X2-12, 1 Oct 99 Certified by: HQ AFCESA/CEOF (CMSgt Myrl F. Kibbe) Pages: 20/Distribution F

# AIR FORCE QUALIFICATION TRAINING PACKAGES FOR ENVIRONMENTAL CONTROLS (3E4X3)

## **INTRODUCTION**

Before starting this AFQTP, refer to and read the "AFQTP Trainer/Trainee Guide."

**AFQTPs are mandatory and must be completed** to fulfill task knowledge requirements on core and diamond tasks for upgrade training. **It is important for the trainer and trainee to understand** that an AFQTP <u>does not</u> replace hands-on training, nor will completion of an AFQTP meet the requirement for core task certification. AFQTPs will be used in conjunction with applicable technical references and hands-on training.

AFQTPs and Certification and Testing (CerTest) must be used as minimum upgrade requirements for Diamond tasks.

## **MANDATORY** minimum upgrade requirements:

#### Core task:

AFQTP completion Hands-on certification

## Diamond task:

AFQTP completion CerTest completion (80% minimum to pass)

<u>Note</u>: Trainees will receive hands-on certification training for Diamond Tasks when equipment becomes available either at home station or at a TDY location.

**Put this package to use.** Subject matter experts under the direction and guidance of HQ AFCESA/CEOF revised this AFQTP. If you have any recommendations for improving this document, please contact the Career Field Manager at the address below.

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## USE REQUIRED PEST MANAGEMENT SAFETY PROTECTIVE EQUIPMENT

MODULE 12 AFQTP UNIT 4

**RESPIRATORS (12.4.7.)** 

## USE RESPIRATORS Task Training Guide

STS Reference Number/Title:	12.4.7., Use Respirators.	
Training References:	<ol> <li>40 Code of Federal Regulation (CFR) 156.212.</li> <li>Air Force Occupational Safety and Health Standard         (AFOSHSTD) 48-8, Controlling Exposures to Hazardous             Materials.</li> <li>AFOSHSTD 48-137, Respiratory Protection Program.</li> <li>AFOSHSTD 91-10, Civil Engineering.</li> <li>AFOSHSTD 91-31, Personal Protective Equipment.</li> <li>AFOSHSTD 91-68, Chemical Safety.</li> <li>29 CFR 1910.132 through 1910.136 and 1910.138.</li> <li>Armed Forces Pest Management Board (AFPMB), Military Pest Management Handbook, Chapter 6, Safety.</li> </ol>	
Prerequisites:	<ol> <li>Possess as a minimum a 3E433 AFSC.</li> <li>Review the following references:         <ol> <li>AFOSHSTDs 48-8, 48-137, 91-10, 91-31, and 91-68.</li> <li>AFPMB, Military Pest Management Handbook, Chapter 6 Safety.</li> </ol> </li> </ol>	
Equipment/Tools Required:	Full-face/half face respirator.	
Learning Objective:	The trainee should learn the steps to use their respirators.	
Samples of Behavior:	Trainee will be able to apply the correct steps in using their full-face/half face respirator.	
Notes:		
<ol> <li>To successfully complete this element, follow the steps outlined in the lessonno exceptions.</li> <li>Any safety violation is an automatic failure.</li> </ol>		

## **RESPIRATORS (USE)**

- **1. Background:** The Environmental Protection Agency (EPA) defines pesticide application personal protective equipment (PPE) as clothing and devices that are worn to protect the human body from contact with pesticides or pesticide residues. Personal protective equipment includes such items as coveralls or protective suits, footwear, gloves, aprons, full/half face respirators and headgear. It does not include ordinary shirts, pants, shoes, and other regular work clothing. This definition only applies to pesticide applicators for many other crafts have their own applicable PPE definition.
  - **1.1.** PPE requirements are on the pesticide label under the "Hazards to Humans and Domestic Animals" statement. Additional requirements for early-entry workers are under the "Directions For Use" section following the "restricted entry" statement. By federal law, you must adhere to all PPE instructions on the pesticide label. For respirators, Bioenvironmental Engineering personnel must fit test respirators for each person; you should have your own PPE and refrain from borrowing someone else's.
- **2.** These are the steps to wearing and maintaining your full/half face respirator.

#### NOTE:

Refer to the manufacturer's instructions for proper inspection, wear, cleaning and storage of respirator.

## 2.1. To perform this task, follow these steps:

### **Step 1: Select Respirator:**

- **1.1.** Select breathing protection devices based on pesticide label instructions or the Material Safety Data Sheet (MSDS) for the product your using. There are several options available including full or half face cartridge respirators or a canister respirator used in areas of higher concentrations of pesticides as in ULV fogging applications in doors. Some respirators are manufactured that after a certain number of hours of continuous use they are discarded in the trash.
- **1.2.** Select the proper respirator size based on the fit test by medical personnel (Bioenvironmental Engineering) sizes include S/M/L.
- **1.3.** Respirators must have National Institute of Occupational Safety and Health (NIOSH) certification.

## Step 2: Inspect Respirator for serviceability (at least monthly) for:

- **2.1.** Holes.
- 2.2. Tears.
- 2.3. Worn inlet and exhaust value disc.
- **2.4.** Yoke (depending on make and model).
- **2.5.** Head straps for elasticity and cracks.
- 2.6. Cleanliness.
- **2.7.** Dry rot.

- **2.8.** Cartridge (replace cartridge filters as necessary normally after 8 hours of continuous exposure to chemicals, unless you start to smell chemicals earlier.) It is vital that you maintain a log of when you installed new filters, time used, and the remaining time left. Attach this log to each cartridge or air tank on hand or mark hours on sides of cartridge with a permanent marker of hours used in a continuous pesticide exposure atmosphere. If a log hasn't been maintained, or the package is opened assume the cartridge or air tank offers no remaining protection and immediately replace it. Depending on manufacture some canister respirators have a looking glass on front of filter to determine if still in functioning condition.
- 2.9. Good working order.

## Step 3: Wear Respirator:

- **3.1.** Ensure respirator fits snugly without interfering with movement or vision.
- **3.2.** Conduct a seal test (positive and negative) to ensure a proper fit every time the respirator is used.

## Step 4: Clean Respirator with:

- **4.1.** Soap and water, respirator sanitation solution, or commercial respirator cleaning pads after every use.
- **4.2.** Disinfect as necessary to maintain sanitary conditions usually once a month.
  - **4.2.1.** Allow respirator to suspend in clean place to air dry.

## Step 5: Store Respirator according to the following conditions:

- **5.1.** Protected from damage from sunlight, extreme temperature, excessive moisture, and damaging chemicals.
- **5.2.** Pack or store to prevent deformation of the face piece and inhalation/exhalation valves.

#### NOTE:

Pest managers should also be included in the installation respiratory program. The program includes a face-fit test, leak test, pulmonary function test, and instructions on proper use, cleaning and care of respirators. Pest managers (civilian employees) are prohibited from wearing beards because respirators will not properly fit over them giving adequate protection against harmful pesticides.

## REVIEW QUESTIONS FOR USE RESPIRATORS

	QUESTION		ANSWER
equi	It makes up personal protection pment (PPE) according to the ronmental Protection Agency (EPA)?	b. c.	Hardhats, respirators, hearing protection. Hardhats, regular work clothing, and respirators. Gloves, aprons, and regular work clothing. Gloves, hardhats, apron, respirators, and regular work clothing.
	ere must pesticide manufactures list requirements?	b. c.	40 Code of Federal Regulation (CFR) Part 156.212, Personal Protective Equipment Statement. Application equipment instructions and pesticide container label. "Direction for Use" and "Hazard to Humans and Domestic Animals" label statements. 29 Code of Federal Regulation (CFR) Part 1910.132, General Requirements.
3. Who	conducts the respirator fit test?	b. c.	Bioenvironmental Engineering. Base Fire Department. Military Public Health. Pesticide Shop supervisor.
	often must you disinfect your irator?	b. c.	Before and after every use. At least daily. At least weekly. At least monthly.

## **USE RESPIRATORS**

## PERFORMANCE CHECKLIST

## **INSTRUCTIONS:**

The trainee must satisfactorily perform all parts of the task without assistance. Evaluate the trainee's performance using this checklist.

DID THE TRAINEE?	YES	NO
1. Acquire his/her personal respirator		
2. Select respirator according to label directions or application equipment manufacture's requirements		
3. Perform a pre- and post-inspection of the respirator correctly		
4. Don the respirator correctly		
5. Properly clean respirator		
6. Properly store respirator		

**FEEDBACK:** Trainer should provide both positive and/or negative feedback to the trainee immediately after the task is performed. This will ensure the issue is still fresh in the mind of both the trainee and trainer.



## APPLY FIRST AID PROCEDURES FOR VICTIMS OF PESTICIDE POISONING

MODULE 12 AFQTP UNIT 5

**ORAL (12.5.1.)** 

**DERMAL (12.5.2.)** 

**RESPIRATORY (12.5.3.)** 

## APPLY FIRST AID PROCEDURES FOR VICTIMS OF ORAL, DERMAL, AND/OR RESPIRATORY PESTICIDE POISONING Task Training Guide

STS Reference	12.5.1., Oral.
Number/Title:	12.5.2., Dermal.
	12.5.3., Respiratory.
	,,
Training References:	AFMPB Military Pest Management Handbook, Chapter 6, Safety.
J	
Prerequisites:	1. Possess as a minimum a 3E433 AFSC.
•	2. Review the AFMPB Military Pest Management Handbook
	Chapter 6, Safety.
Equipment/Tools	1. Material Safety Data Sheets (MSDS).
Required:	2. Pesticide Labels.
Learning Objective:	Trainee should be able to identify oral, dermal, and respiratory
	poisoning and administer appropriate first aid procedures for each
	poison.
	·
Samples of Behavior:	Trainee will be able to explain the symptoms of oral, dermal, and
	respiratory poisoning and administer the appropriate first aid
	procedures for each one.
Notes:	

- 1. To successfully complete this element follow the steps outlined in the lesson no--exceptions.
- 2. Any safety violation is an automatic failure.

## APPLY FIRST AID PROCEDURES FOR VICTIMS OF ORAL, DERMAL, AND/OR RESPIRATORY PESTICIDE POISONING

- 1. Background: Pesticides are designed to kill dangerous or nuisance animals, insects, and plants. Many pesticides do this by disrupting life sustaining bodily functions including the respiratory, nervous, and circulatory systems. Unfortunately, these same pesticides will make us ill or even kill us. Seek medical help quickly if you or your co-workers develop unexplained illnesses. Don't let yourself or anyone else who applies pesticides get dangerously sick before seeking medical help. Here, it is better to be too cautious than too late. Secure copies of Material Safety Data Sheets (MSDS) and copies of the pesticide labels (you should keep copies of pesticide labels in your shop for such occasions) and take them to the physician. If you must take the pesticide container, DO NOT place it in the passenger space of the vehicle and don't take it into the hospital (leave it secured in the back of the vehicle). In addition, make copies of all pesticide labels and their MSDS's that you use on the installation. Organize them in binders alphabetical or pesticide class and store in the shop vehicles in case their every is an emergency so you can readily have all the information needed at a moments notice no matter where you are on or off the installation.
- **2. PESTICIDE POISONING:** For the purpose of this lesson, we use the term "pesticide poisoning" to refer to the unintentional poisoning of pest management personnel. Although the first aid procedures are the same for non-pesticide applicators, the risk of Environmental Control personnel being poisoned is much higher. There are three types of pesticide poisoning—oral, dermal, and respiratory. Each has its own way of entering the system and each has different first aid treatments.

## 2.1. ORAL POISONING.

- **2.1.1.** Oral poisoning occurs when pesticides are <u>ingested</u> into the body. Common activities that lead to ingestion poisoning include:
  - **2.1.1.1.** Not washing hands before eating.
  - **2.1.1.2.** Not showering after applying pesticides.
  - **2.1.1.3.** Smoking during or shortly after applying pesticides.
    - **2.1.1.3.1.** Pesticides may be transferred from the hands, to the cigarette, to the mouth.
  - **2.1.1.3.2.** An open pack of cigarettes may absorb the pesticides.
  - 2.1.1.4. Using damaged gloves.
  - **2.1.1.5.** Eating during or shortly after applying pesticides.
  - **2.1.1.6.** Drinking pesticide contaminated water.
- **2.1.2. FIRST AID FOR ORAL POISONING:** The best first aid in pesticide emergencies is to stop the source as quickly as possible. First aid is the initial effort to help a victim while medical help is on the way. If you are alone with the victim, ensure the victim is breathing and not being further exposed to the pesticide before you call for emergency help.

## NOTE:

If a person is suspected of oral poisoning and is not breathing, **DO NOT** apply mouth-to-mouth resuscitation. Apply other forms if available, but **DO NOT** risk exposing yourself to the poison they have in their system.

- **2.1.2.1.** In an emergency, look at the pesticide labeling or MSDS, if possible. If it gives specific first aid instructions, follow those instructions carefully. If labeling or MSDS instructions are not available, follow these general guidelines for first aid:
- Step 1: Rinse mouth with plenty of water.
- Step 2: Give victim large amounts (up to 1 quart) of milk or water to drink.
- Step 3: Induce vomiting only if instructions to do so are on the labeling or MSDS.
- **Step 4: Procedures for Inducing Vomiting:**
- **4.1.** Position victim face down or kneeling forward. Do not allow victim to lie on his or her back, because the vomit could enter the lungs and do additional damage.
- **4.2.** Put finger or blunt end of a spoon at the back of victim's throat or give syrup of ipecac.
- **4.3. DO NOT** use salt solutions to induce vomiting.

### NOTE:

- 1. **DO NOT** induce vomiting:
  - 1.1. If the victim is unconscious or is having convulsions.
  - 1.2. If the victim has swallowed a corrosive poison. A corrosive poison is a strong acid or alkali. It will burn the throat and mouth as severely coming up as it did going down. It may get into the lungs and burn there also.
  - 1.3. If the victim has swallowed an emulsifiable concentrate or oil solution. Emulsifiable concentrates or oil solutions may cause death if inhaled during vomiting.

## Step 5: Call or tell someone to call for ambulance.

### 2.2. **DERMAL POISONING**.

- **2.2.1.** Dermal poisoning occurs when poison <u>penetrates</u> the skin surface by absorption or through open wounds. Some pesticides contain chemicals that can be harmful to your skin on contact, causing itching, blistering, cracking, or causing your skin to change in color. Your skin and eyes normally function to protect you from potentially harmful substances that you come in contact with. However, some pesticides contain substances that can penetrate the natural barrier provided by your skin and eyes. Once inside, the pesticide can be carried by the blood stream and cause harm to you through acute effects, delayed affects, and allergic reactions.
- **2.2.2.** Assuming all pesticides are toxic, pest managers must have a basic understanding of preventing, handling, and if exposure should occur, applying first aid procedures. Exposure through dermal contact is one of the easiest to avoid. When handling pesticides, whether during preparation, storing, or application, proper measures should be taken to avoid contact with the skin and eyes. Each time you prepare to work around any type of pesticide, protective gear should be donned. Your protective gear should consist of cotton coveralls, unlined neoprene gloves, half or full-face respirator, and goggles. Areas that are very susceptible to dermal poisoning are the groin area (primarily) and the eyes.

12.5.3.

#### 2.2.3. FIRST AID FOR DERMAL POISONING:

- **Step 1: Drench skin and clothing with plenty of water.** Any source of relatively clean water will serve. If possible, immerse the person in a pond, creek, or other body of water. Even water in ditches or irrigation systems will do, unless you think they may have pesticides in them.
- **Step 2:** Remove personal protective equipment and contaminated clothing. Wash skin and hair thoroughly with a mild liquid detergent and water, if one is available, a shower is the best way to completely and thoroughly wash and rinse the entire body surface.
- **Step 3: Dry victim and wrap in a blanket or any clean clothing on hand. DO NOT** allow victim to become chilled or over-heated. If skin is burned or otherwise injured, cover immediately with a loose, clean, dry, soft cloth or bandage. **DO NOT** apply ointments, greases, powders, or other drugs in first aid treatment of burns or injured skin.
- **Step 4:** If pesticides get in the eyes wash eyes quickly but gently. Use an eyewash dispenser, if available. Otherwise, hold eyelid open and wash with a gentle drip of clean running water positioned so that it flows across the eye rather than directly into the eye. Rinse eye for 15 minutes or more. **DO NOT** use chemicals or drugs in the rinse water they may increase the injury.
- Step 5: After applying first aid, seek medical attention immediately.

## 2.3. RESPIRATORY POISONING.

- **2.3.1.** Respiratory poisoning comes from <u>inhaling</u> pesticides through the nose or the mouth. Inhalation poisoning occurs when pest managers:
  - **2.3.1.1.** Fail to wear respiratory protection.
  - **2.3.1.2.** Wear the incorrect respirator for the application.
- **2.3.1.3.** Wear a respirator whose cartridge filter has broken through.
- **2.3.1.4.** Wear a respirator incorrectly.
- **2.3.1.5.** Wear a damaged respirator.
- **2.3.1.6.** Wear a contaminated respirator.
- **2.3.1.7.** In summary, if a person is suspected of inhalation poisoning, first check their respirator.

## 2.3.2. FIRST AID FOR RESPIRATORY POISONING:

- Step 1: Get victim to fresh air immediately.
- Step 2: If other people are in or near the area, warn them of the danger.
- Step 3: Loosen tight clothing on victim that would constrict breathing.
- Step 4: Apply artificial respiration if breathing has stopped or if the victim's skin is blue.
  - **4.1.** If pesticide or vomit is on the victim's mouth or face, avoid direct contact.

## NOTE:

If a person is suspected of respiratory poisoning and is not breathing, **DO NOT** apply mouth-to-mouth resuscitation. Apply other forms if available, but **DO NOT** risk exposing yourself to the poison they have in their system.

Step 5: Call or tell someone to call for an ambulance.

## REVIEW QUESTIONS FOR

## APPLY FIRST AID PROCEDURES FOR VICTIMS OF ORAL, DERMAL, AND/OR RESPIRATORY PESTICIDE POISONING

	QUESTION		ANSWER
1.	How do pesticides control dangerous or nuisance animals, plants, and weeds?	a. b. c. d.	Making the target unpalatable. Disrupting life sustaining bodily functions. Making the non-target unpalatable. Removing their food source.
2.	Which is a major cause of inhalation poisoning?	a. b. c.	Using a respirator improperly. Smoking at the job site. Failure to shower after applying pesticides. Using damaged gloves.
3.	Inducing a victim to vomit for oral poisoning is performed all the time.	a.	True. False.
4.	When you suspect pesticide poisoning, what should you take into the hospital for the physician?	a. b. c. d.	container only. Material Safety Data Sheet only.
5.	How can smoking cigarettes lead to oral pesticide poisoning?	<ul><li>a.</li><li>b.</li><li>c.</li><li>d.</li></ul>	Cigarette smoke condenses suspended pesticide particles. Smoking compromises the body's immune system. Cigarettes may absorb pesticide from the air.
6.	What is the first step for dermal poisoning?		Induce vomiting. Seek medical attention. Drench skin and clothing with water. Begin artificial respiration.
7.	What is the first aid step for chemical burns?	C.	Cover with a clean bandage only.  Apply a light oil ointment and bandage.  Apply powder mixture and bandage.  Apply grease solution and bandage.
8.	How long should eyes be flushed with water to treat for contamination?	a. b. c. d.	5 minutes. 12 minutes. 9 minutes. 15 minutes.
9.	What is the first step to treat a person exposed to respiratory poisoning?	a. b. c. d.	Drench skin and clothing with water. Get them into fresh air. Seek medical attention. Induce vomiting.

## APPLY FIRST AID PROCEDURES FOR VICTIMS OF ORAL, DERMAL, AND/OR RESPIRATORY PESTICIDE POISONING

## PERFORMANCE CHECKLIST

## **INSTRUCTIONS:**

The trainee must satisfactorily perform all parts of the task without assistance. Evaluate the trainee's performance using this checklist.

DID THE TRAINEE?	YES	NO
Obtain a pesticide label and/or MSDS sheet for the pesticide		
2. Apply or explain the correct first aid procedures for oral poison		
3. Apply or explain the correct first aid procedures for dermal poison		
4. Apply or explain the correct first aid procedures for respiratory poison		

**FEEDBACK:** Trainer should provide both positive and/or negative feedback to the trainee immediately after the task is performed. This will ensure the issue is still fresh in the mind of both the trainee and trainer.

# Air Force Civil Engineer QUALIFICATION TRAINING PACKAGE (QTP)

## **REVIEW ANSWER KEY**



FOR
ENVIRONMENTAL CONTROLS
(3E4X3)

**MODULE 12** 

**AFS SPECIFIC HEALTH AND SAFETY** 

## USE RESPIRATORS (3E4X3-12.4.7.)

	QUESTION		ANSWER
1.	What makes up personal protection equipment (PPE) according to the Environmental Protection Agency (EPA)?	a.	Hardhats, respirators, hearing protection.
2.	Where must pesticide manufactures list PPE requirements?	C.	"Direction for Use" and "Hazard to Humans and Domestic Animals" label statements.
3.	Who conducts the respirator fit test?	a.	Bioenvironmental Engineering.
4.	How often must you disinfect your respirator?	d.	At least monthly.

## APPLY FIRST AID PROCEDURES FOR VICTIMS OF ORAL, DERMAL, AND/OR RESPIRATORY PESTICIDE POISONING

(3E4X3-12.5.1./.2./.3.)

	QUESTION		ANSWER
1.	How do pesticides control dangerous or nuisance animals, plants, and weeds?	b.	Disrupting life sustaining bodily functions.
2.	Which is a major cause of inhalation poisoning?	a.	Using a respirator improperly.
3.	Inducing a victim to vomit for oral poisoning is performed all the time.	b.	False.
4.	When you suspect pesticide poisoning, what should you take into the hospital for the physician?	a.	Material Safety Data Sheet and pesticide label only.
5.	How can smoking cigarettes lead to oral pesticide poisoning?	C.	Cigarettes may absorb pesticide from the air.
6.	What is the first step to dermal poisoning?	C.	Drench skin and clothing with water.
7.	What is the first aid step for chemical burns?	a.	Cover with a clean bandage only.
8.	How long should eyes be flushed with water to treat for contamination?	d.	15 minutes.
9.	What is the first step to treat a person exposed to respiratory poisoning?	b.	Get them into fresh air.

## MEMORANDUM FOR HQ AFCESA/CEOF 139 Barnes Drive Suite 1 Tyndall AFB, FL 32403-5319

FR	ROM:
SU	JBJECT: Qualification Training Package Improvement
1.	Identify module.
	Module # and title
2.	Identify improvement/correction section(s):
3.	STS Task Reference Performance Checklist Training Reference Feedback Evaluation Instructions Format Performance Resources Other Steps in Task Performance  Recommended changesuse a continuation sheet if necessary.
	,

- 4. You may choose to call in your recommendations to DSN 523-6380 or FAX DSN/Commercial 523-6488 or (850) 283-6488 or email <a href="mailto:ceof.helpdesk@tyndall.af.mil">ceof.helpdesk@tyndall.af.mil</a>.
- 5. Thank you for your time and interest.

YOUR NAME, RANK, USAF Title/Position